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#### (54) SEMANTIC ZOOM LINGUISTIC HELPERS

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(52) **U.S. Cl.** 

(58) Field of Classification Search

# (56) References Cited

#### U.S. PATENT DOCUMENTS

4,823,283 A 4/1989 Diehm et al. 5,045,997 A 9/1991 Watanabe

5,046,001 A	9/1991	Barker et al.	
5,189,732 A	2/1993	Kondo	
5,258,748 A	11/1993	Jones	
5,297,032 A	3/1994	Trojan et al.	
5,321,750 A	6/1994	Nadan	
5,339,392 A	8/1994	Risberg et al.	
5,432,932 A	7/1995	Chen et al.	
5,463,725 A	10/1995	Henckel et al.	
5,485,197 A	1/1996	Hoarty	
5,495,566 A	2/1996	Kwatinetz	
5,506,951 A	4/1996	Ishikawa	
5,510,808 A	4/1996	Cina, Jr. et al.	
5,515,495 A	5/1996	Ikemoto	
	(Continued)		

## FOREIGN PATENT DOCUMENTS

CN	1326564	12/2001	
CN	1591305	3/2005	
	(Co	(Continued)	

#### OTHER PUBLICATIONS

Normalizing Text by Oracle, Nov. 11, 2006, http://docs.oracle.com/javase/tutorial/i18n/text/normalizerapi.html.\*

(Continued)

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### (57) ABSTRACT

Semantic zoom techniques are described. In one or more implementations, techniques are described that may be utilized by a user to navigate to content of interest. These techniques may also include a variety of different features, such as to support semantic swaps and zooming "in" and "out." These techniques may also include a variety of different input features, such as to support gestures, cursor-control device, and keyboard inputs. A variety of other features are also supported as further described in the detailed description and figures.

## 20 Claims, 18 Drawing Sheets

